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CHARTING THE EVOLUTION OF THE EARTH'S ATMOSPHERE

Directions:

1. Choose one color for each of the gases. Highlight the name of the gas with the color you choose.
2. Plot data points for carbon dioxide on the chart. Connect the points to form a line graph in the color chosen for carbon dioxide. Get this graph checked by the teacher before you plot the next four lines.
3. Plot each of the next four sets of points and line graphs in a different color. Your graph should have 5 colored lines when you are finished.
4. Use the table "Important Events in the Evolution of the Earth" to create a time line beneath the line graphs. Use an arrow to point to the year and write the words that describe the event that occurred at that time.

Gas	Millions of years before the present									
	4500	4000	3500	3000	2500	2000	1500	1000	500	Present
Carbon dioxide	80%	20%	10%	8%	5%	3%	1%	0.07%	0.04%	0.025%
Nitrogen	10	35	55	65	72	75	76	77	78	78
Hydrogen	5	3	1	0.5	0	0	0	0	0	0
Oxygen	0	0	0	0	0	1	5	10	15	21
Other gases	5	42	34	26	23	21	18	13	7	1

IMPORTANT EVENTS IN THE EVOLUTION OF THE EARTH

1.	Formation of the Earth	4500 million years ago
2.	Oldest known bedrock	3900
3.	Oldest rocks of organic origin	3700
4.	Precambrian iron deposits	3700-1800
5.	Photosynthesis in plants begins	3000
6.	Oxygen in air dominates weathering	2100
7.	Limestone deposition becomes common	1800
8.	Fossils become abundant	570
9.	Earliest plants and animals on land	420

Evolution of the Atmosphere Notes

1. Scientists agree that the age of the earth is about _____billion years old or _____ million years old. There was considerable _____ activity during this time. Tremendous amounts of gases vented in a process known as _____. According to your graph, what gases where in the atmosphere at that time? What was the percentages for each gas?

   a. _____ _____

   b. _____ _____

   c. _____ _____

   d. _____ _____

   e. _____ _____

2. The oldest known fossils of _____ are about 3.46 billion or _____million years old. These fossils used _____ to convert carbon dioxide and water into sugar. Aby product of this was production of _____. According to your graph, What gases were present n the atmosphere 3000 million years ago? (3 billion)

   a. _____ _____

   b. _____ _____

   c. _____ _____

   d. _____ _____

   e. _____ _____

3. Iron reacts in the atmosphere with _____ to produce _____ which is _____ in color. Banded iron formation of rocks called _____ date back to _____ billion or _____million years in age. According to your graph, what was the composition of the atmosphere 2000 million years ago? (2 billion)

   a. _____ _____

   b. _____ _____

   c. _____ _____

d. _____ _____

e. _____ _____

4. As oxygen was produced by photosynthesis, oxygen began reacting and forming _____. The ozone filtered out UV radiation from the sun so that other life forms could exist on earth. According to your graph , the ozone formed about _____ million years ago. What was the compositon of the atmosphere at that time?

a. _____ _____

b. _____ _____ _____

c. _____ _____

d. _____ _____

e. _____ _____

5. As life flourished on earth, the atmosphere began _____ elements through the atmosphere until the atmosphere reached its current stae of _____. According to your graph, what is the current composition of the atmosphere?

a. _____ _____

b. _____ _____

c. _____ _____

d. _____ _____

e. _____ _____

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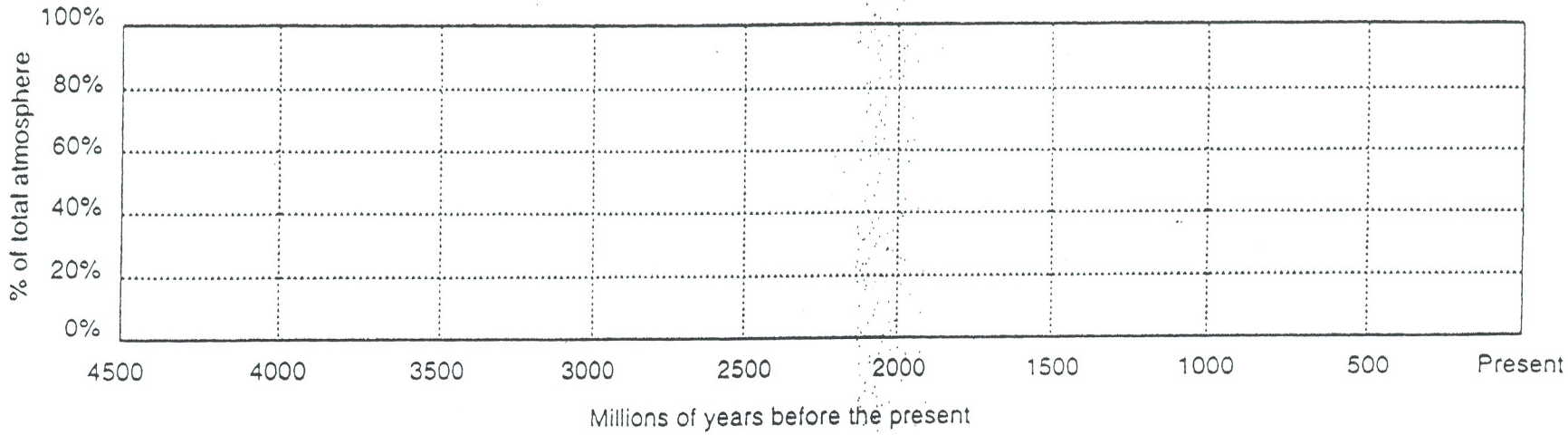

Formation of the Earth →